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Agricultural Memorandum No. 256

Return to Soil Moisture Capacity - Influence of August Deficit

The analysis of Ag. Mem. 250 was extended, the data being resorted into categories of end-of-August Soil Moisture Deficit (estimated actual).

Each of the five zones was subdivided into rainfall ranges, namely

Below 25 in.
25-30 in.
30-35 in.
Above 35 in.

The mean capacity dates were as follows (dates in brackets based on small samples):-

End of August Deficit

Rainfall	Zone	0-1	1-2	2-3	3-4	4-5	5 (max)
Over 35 in.	North	Sept. 9	Sept. 29	Oct. 8	Oct. 30	Nov. 10	-
	South West	Sept. 10	Oct. 4	Oct. 14	Oct. 15	Nov. 2	(Nov 15)

Approximate formula:-

Number of days after August 31 = 15D+2
where D = end of August soil moisture deficit in inches.

30-35 in.	North	Sept. 9	Oct. 5	Oct. 19	Nov. 7	Nov. 21	-
	Midlands	Sept. 15	Oct. 8	Oct. 21	Nov. 7	Nov. 24	(Nov 15)
	South West	Sept 10	Oct. 3	Oct. 22	Nov. 5	Nov. 19	Nov. 5
	South East	Sept. 12	Oct. 10	Nov. 3	Nov. 10	Nov. 26	Nov.12

Approximate formula = 18D+5

25-30 in.	North	Sept. 17	Oct. 6	Nov. 9	Nov. 23	Dec. 10	(Dec.15)
	Midlands	Sept. 28	Oct. 13	Oct. 28	Nov. 20	Dec. 8	Nov.30
	South West	(Sept. 5)	(Sept.27)	Oct. 28	Nov. 13	Nov. 20	Nov.15
	South East	(Nov. 8)	Oct. 9	Nov. 10	Nov. 26	Dec. 6	Nov.22

Approximate formula = 21D+6

Below 25 in.	North	Oct. 10	Oct. 16	Nov. 12	(Nov.23)	Dec. 18	(Dec.27)
	Midlands	Oct. 5	Oct. 27	Nov. 10	Nov.23	Dec. 15	Dec.23
	South East	(Nov.10)	Oct. 10	Nov. 17	(Dec.15)	Dec. 16	Dec.16
	East	Oct. 8	Oct. 27	Nov. 27	Dec.10	Dec. 14	Dec.29

Approximate formula = 18D+27

/There

There is a distinct tendency (except in the East) for the dates in the last column to be earlier than those in the last but one. This may be due to a climatic tendency for autumn rains to be earlier in the wetter regions following a very dry summer; this may repay investigation.
Full details of spread about the mean dates are given in the Appendix.

Any comments or criticism on this paper should be sent to the author.

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January 1969.

North

(a) Over 35 in. annual rainfall

End of August Deficit

Capacity Date	0-1	1-2	2-3	3-4	4-5	5
S1	7	1				
S2	1	1	2			
S3	0	3	1			
O1	1	2		1		
O2		1	1		1	
O3		1		4		
N1			2	3	1	
N2				2	1	
N3						
D1					1	
D2						
D3						
Jan. 1						
Jan. 2						
Jan. 3						
Feb. 1						
Feb. 2						
Feb. 3						
Mean	Sept 9th	Sept 29th	Oct. 8th	Oct. 30th	Nov. 10th	-

North

(b) 30-35 in.

End of August deficit

0-1	1-2	2-3	3-4	4-5	5
11					
1	3				
	7	5			
	4	8	1		
1	2	3		1	
		1	2	3	
	2	1	4	1	
		2	5	2	
			1	1	
	1	2		6	
				2	
		1			
Sept 9th	Oct. 5th	Oct. 19th	Nov. 7th	Nov. 21st	-

North

(c) 25-30 in.

End of August deficit

Capacity Date	0-1	1-2	2-3	3-4	4-5	5
S1	7					
S2	2	4				
S3	1	2	3			
O1		4	1	2		
O2	1	1		2	1	
O3		1	4			
N1		1	5	3	2	
N2	1		3	6	4	
N3			1	1	4	
D1		1	1		7	
D2			4	3	4	1
D3			1	4	5	
Jan. 1				2	3	
Jan. 2					4	
Jan. 3						
Feb. 1						
Feb. 2						
Feb. 3						
Mean	Sept 17th	Oct. 6th	Nov. 9th	Nov. 23rd	Dec. 10th	Dec. 15th

North

(d) Below 25 in.

End of August deficit

0-1	1-2	2-3	3-4	4-5	5
2					
3	1				
1	3				
1	1	2			
	1				
	1	3		1	
1	1	4	1	2	
2	1	4	2	3	
		1	1	3	
1	1			1	
		2		3	1
		2	1	5	2
				3	
				3	1
				3	
				1	
Oct. 10th	Oct. 16th	Nov. 12th	Nov. 23rd	Dec. 18th	Dec. 27th

Midlands

(a) Over 30 in.

End of August Deficit

Capacity Date	0-1	1-2	2-3	3-4	4-5	5
S1	7	1				
S2		3				
S3		4	3			
O1	2	2				
O2	1	3	5	2	1	
O3		1	3	5	1	1
N1		3	2	4	5	
N2			3	3	2	1
N3		1		1	3	
D1				1	7	1
D2						
D3				1	2	
Jan. 1					1	
Jan. 2						
Jan. 3						
Feb. 1						
Feb. 2						
Feb. 3						
Mean	Sept 15th	Oct. 8th	Oct. 21st	Nov. 7th	Nov. 24th	Nov. 15th

Midlands

(b) 25-30 in.

End of August Deficit

0-1	1-2	2-3	3-4	4-5	5
3					
5	5				
2	3	4	1		
	1	4			
2	5	2	2		1
1	1	6	6	3	2
	5	13	6	9	
1	1	3	9	10	
	1	3	6	4	1
			7	10	3
		1	3	5	1
			5	5	
			1	8	
				6	2
				1	
				1	
				1	
Sept. 28th	Oct. 13th	Oct. 28th	Nov. 20th	Dec. 8th	Nov. 30th

Midlands

(c) Below 25 in.

End of August Deficit

Capacity Date	0-1	1-2	2-3	3-4	4-5	5
S1	1					
S2	1					
S3		1	1		1	
O1	1	2	1	1	1	
O2	3	2			1	
O3	1			2		
N1		2	4	4	3	
N2		1	3	3	6	
N3		1	2	3	2	1
D1		1	2	2	4	
D2				1	5	2
D3				3	1	1
Jan. 1					7	1
Jan. 2				1	4	
Jan. 3					4	1
Feb. 1					2	
Feb. 2						
Feb. 3					1	
Mean	Oct. 5th	Oct. 27th	Nov. 10th	Nov. 23rd	Dec. 15th	Dec. 23rd

South-West

(a) Over 35 in.

End of August Deficit

0-1	1-2	2-3	3-4	4-5	5
10					
1	5	2			
	5	3	1		
		4		2	
	3	2	3	1	
1	1	1	2	2	
		2		5	
	1			2	1
	1	1		1	
		1		1	
Sept. 10th	Oct. 4th	Oct. 14th	Oct. 15th	Nov. 2nd	Nov. 15th

South-West

(b) 30-35 in.

End of August Deficit

Capacity Date	0-1	1-2	2-3	3-4	4-5	5
S1	2	1				
S2	2	7	1			
S3		4	3		1	
O1		4	1	3		
O2		1	5	5	3	2
O3		3	6	7	6	3
N1			4	6	6	4
N2		1		4	6	2
N3		1	2	1	4	
D1			1	2	6	1
D2				2	4	
D3				1	3	
Jan. 1					2	
Jan. 2						
Jan. 3						
Feb. 1						
Feb. 2						
Feb. 3						
Mean	Sept. 10th	Oct. 3rd	Oct. 22nd	Nov. 5th	Nov. 19th	Nov. 5th

South-West

(c) Below 30 in.

End of August Deficit

0-1	1-2	2-3	3-4	4-5	5
2					
	3	2			
	1	3	1		
		1	3	2	2
		1	2	4	1
		5	4	6	2
		2	3	2	2
			2	3	
		1	3	7	1
		1			1
			2	3	1
Sept. 5th	Sept. 27th	Oct. 28th	Nov. 13th	Nov. 20th	Nov. 15th

South-East

(a) Over 30 in.

Capacity Date	End of August Deficit 0-1	1-2	2-3	3-4	4-5	5
S1	2					
S2	1	3				
S3	1	4				
O1		1	1	1		
O2		1	1	1		3
O3			1	2	6	2
N1		2	1	4	3	1
N2				1	4	4
N3		2	1	2	3	1
D1			1		5	
D2				2	3	1
D3					3	1
Jan. 1					3	
Jan. 2						
Jan. 3						
Feb. 1						
Feb. 2						
Feb. 3						
Mean	Sept. 12th	Oct. 10th	Nov. 3rd	Nov. 10th	Nov. 26th	Nov. 12th

South-East

(b) 25-30 in.

Capacity Date	End of August Deficit 0-1	1-2	2-3	3-4	4-5	5
S1						
S2		4	1			
S3		5	1			
O1		2	1	1		
O2			1			1
O3	1	2	1		2	7
N1		3	3	3	5	2
N2	2		2	2	5	6
N3			1	2	10	3
D1		1	2	3	10	1
D2				4	15	1
D3			1	1	7	2
Jan. 1					2	3
Jan. 2			1		4	1
Jan. 3						
Feb. 1						
Feb. 2						
Feb. 3						
Mean	Nov. 8th	Oct. 9th	Nov. 10th	Nov. 26th	Dec. 6th	Nov. 22nd

South-East

(c) Below 25 in.

End of August Deficit

Capacity Date	0-1	1-2	2-3	3-4	4-5	5
S1						
S2		1				
S3		1	1			
O1						
O2						
O3		1				1
N1		1			2	3
N2	1		3		2	2
N3				1	7	3
D1					5	
D2			2	1	1	2
D3						1
Jan. 1				1	3	2
Jan. 2					3	2
Jan. 3						2
Feb. 1						1
Feb. 2					2	1
Feb. 3						
Not at all					1	
Mean	Nov. 10th	Oct. 10th	Nov. 17th	Dec. 15th	Dec. 16th	Dec. 16th

East

(a) Below 25 in

End of August Deficit

	0-1	1-2	2-3	3-4	4-5	5
S1	2					
S2		1				
S3	2	3				
O1	2	1				
O2	3	2	1			
O3	1	1		1	1	
N1	1	3	4	6	3	1
N2	1	8	5	7	13	2
N3		1	7	11	22	8
D1			3	7	14	6
D2			5	5	11	5
D3			3	8	16	8
Jan. 1				6	9	2
Jan. 2				4	4	13
Jan. 3				1	2	2
Feb. 1				1	4	3
Feb. 2				1	3	1
Feb. 3				1	1	1
Not at all					1	3
Mean	Oct. 8th	Oct. 27th	Nov. 27th	Dec. 10th	Dec. 14th	Dec. 29th